

EXTRACTION OF METALS WITH DIQUATERNARY AMINES

ABSTRACT OF THE DISCLOSURE

Selective extraction of one or more metal anions from an aqueous solution, by contacting the aqueous solution with an organic solution including a diquaternal amine, wherein the diquaternal amine has two diquaternal nitrogens spaced at a distance of less than about 10 Å, selectively binding the metal anions to the diquaternal amine, and then separating the organic solution from the aqueous solution, wherein the diquaternal amines having the selectively bound metal anions are concentrated in the organic solution. Alternatively, the diquaternal amines may be adsorbed or chemically bonded to a solid, and the metal anion-containing aqueous solution passed over the solid having the diquaternal amines. Palladium may be selectively extracted by contacting the acidic solution with an iodide and an organic solvent, allowing the palladium to bind to the iodide, and then separating the organic solution from the aqueous solution, concentrating the bound palladium ions in the organic solution.